

Technical Report

## **Prediction of Sediment Remobilized by Removal of the Bingham Mills Dam in the Hudson River Watershed**

Submitted to New York State Water Resources Institute (WRI) at Cornell University  
and New York State Department of Environmental Conservation (DEC),  
Hudson River Estuary Program  
for the project “Prediction of Sediment Remobilized by Removal of an Aged Dam in the  
Hudson River Watershed”

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## Summary

The Bingham Mills Dam is an abandoned, old dam located on the Roeliff Jansen Kill, a tributary of the Lower Hudson River in New York. It used to provide hydropower for the mills nearby, and now does not have any use. The Bingham Mills Dam and the waterfalls are barriers for fish migrating upstream. A management option is to remove the dam for safety concern. The research team surveyed the channel bathymetry upstream and downstream of the dam and collected samples to assess the sediment size compositions and the chemicals absorbed on the sediments. The measured data show that the sediments in the reservoir are mostly sand and gravel, and have very little amounts of mercury, PCBs and pesticides. The erodible sediments in the reservoir are less than 1.4 m thick, and about 9,126 m<sup>3</sup> in volume. Then, a depth-averaged 2-D numerical model called CMS was used to simulate the sediment erosion after the dam removal. The numerical simulation shows that most of the sediments in the reservoir can be washed downstream within a large flood event. The total eroded sediment is about 7,370 m<sup>3</sup>. The collected data and derived results can be used for future studies on the feasibility of removing the Bingham Mills Dam and the potential impacts on the downstream stream water quality and habitats.

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